

REBUTTAL TESTIMONY OF
JOSEPH M. LYNCH
ON BEHALF OF
SOUTH CAROLINA ELECTRIC & GAS COMPANY
DOCKET NO. 2017-370-E

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Joseph M. Lynch, and my business address is 220 Operation
3 Way, Cayce, South Carolina.

4 **Q. HAVE YOU PREVIOUSLY SUBMITTED DIRECT TESTIMONY IN THIS**
5 **PROCEEDING?**

6 A. Yes, I have.

7 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

8 A. The purpose of my rebuttal testimony is to address claims made by Mr.
9 Norman Richardson on behalf of the ORS suggesting that SCE&G's economic
10 analyses of 2015, 2016 and 2017 are flawed and should be updated with his
11 corrections.

12 **Q. ARE THE COMPANY'S ECONOMIC STUDIES FILED IN 2015 AND 2016**
13 **RELEVANT TO THE ISSUE OF PRUDENCY?**

14 A. No. These studies and Mr. Richardson's criticisms of them are not relevant.
15 The Commission has consistently stated that it "is mindful that a Base Load
16 Review Order constitutes a 'final and binding determination that a plant is used

1 and useful for utility purposes'...." Order No. 2009-104(A) at 8. The Commission
 2 reiterated this point after reviewing the 2012 study:

3 As to the prudence of continuing construction of the Units, the
 4 Commission finds that SCE&G has presented evidence establishing
 5 that the most prudent, reasonable and beneficial base load resource
 6 strategy for it to pursue at this time is to complete construction of the
 7 Units as proposed. The evidence shows that it would not be prudent,
 8 reasonable or beneficial to SCE&G or its customers to switch to a
 9 natural gas resource strategy. ***While this finding is justified by the***
 10 ***evidence presented at hearing, this Commission also finds that the***
 11 ***BLRA does not require that this issue be relitigated once the initial***
 12 ***finding has been made."***

13
 14 Order No. 2012-884 at 69 (emphasis added). SCE&G's justification of the project
 15 to the Commission led to the 2014 South Carolina Supreme Court decision. *S.C.*
 16 *Energy Users Comm. v. S. C. Elec. & Gas.*

17 In *S.C. Energy Users*, the South Carolina Supreme Court concurred with
 18 the Commission ruling and found that re-justification of the prudence of
 19 continuing construction was not required under the BLRA. *See S.C. Energy Users*
 20 *Comm. v. S. C. Elec. & Gas*, 410 S.C. 348, 359-60, 764 S.E.2d 913, 918 (2014).
 21 SCE&G nonetheless requested that I continue to update and submit my analyses of
 22 the economic justification of the project in each subsequent BLRA proceeding to
 23 demonstrate to the Commission and the public that SCE&G continued to monitor
 24 the economics of the project and that the project was economically justified at the
 25 time of each proceeding. I updated the studies for these reasons and not because
 26 updates were required by statute. For those reasons, Mr. Richardson's criticisms of
 27 my studies are not germane to any issues before the Commission.

1 Furthermore, ORS had the opportunity to raise any of the issues Mr.
2 Richardson raises here in the prior proceedings but did not. In all cases, my studies
3 were pre-filed in the record of the relevant proceeding and were subject to
4 discovery. I presented them in my testimony and was subject to cross examination
5 on them. Under the provisions of the BLRA, ORS had the right to retain any
6 expert witnesses it chose to review my work as presented in those proceedings.
7 SCE&G was required to pay their expenses.

8 Nevertheless, ORS did not raise any challenge to the studies I presented in
9 2015 or 2016 but instead has waited until the relevant dockets have now been
10 closed for three and two years respectively to challenge these studies. Apart from
11 the benefit of hindsight, there is no reason Mr. Richardson could not have
12 conducted his review and presented his concerns about these studies in a timely
13 way. Nonetheless, I have responded to Mr. Richardson's criticisms, below.

14 **Q. WHAT IS MR. RICHARDSON'S FIRST CRITICISM OF THE 2015**
15 **STUDY?**

16 A. Mr. Richardson contends that the Base Load Review Act ("BLRA")
17 revenue (and related income tax) were calculated using an 11% Return on Equity
18 ("ROE") instead of a 10.25% ROE. As a result, Mr. Richardson argues that the
19 benefit of the new nuclear development ("NND") over a gas scenario should be
20 increased by \$19.8 million. Furthermore, Mr. Richardson contends that six months
21 of BLRA revenue was not included in the year of service. Thus, Mr. Richardson
22 maintains the NND benefit should be reduced by \$22 million. The net effect of

these two adjustments, the \$19.8 million adjustment and the \$22 million adjustment, is a reduction in the levelized value of the nuclear scenario by \$2.2 million.

Q. DO YOU AGREE THAT THE NND BENEFITS SHOULD BE REDUCED BY \$2.2 MILLION?

A. No, I do not. The BLRA revenue actually recovered by SCE&G is calculated based on expenditures covering the period of 12 months ending in each year's month of June with rates then going into effect in October. In contrast, the study based its analysis on the calendar year annual expenditures, which was an appropriate proxy. In addition, the table below compares the actual BLRA revenue to the projected BLRA revenue used in SCE&G's study for the years stated.

	Actual BLRA Revenue (\$MM)	Projected BLRA Revenue (\$MM)	Difference (\$MM)
2015	\$380.6	\$383.4	\$-2.8
2016	\$445.0	\$522.3	\$-77.3

The comparison shows that the forecasted BLRA revenue for purposes of the study was more than the actual. If an adjustment to the NND benefit were to have been made, the adjustment would have gone in the other direction from that suggested by Mr. Richardson.

Furthermore, a ROE of 11% was correct for calculating a return on nuclear CWIP and the income tax effect added 0.25% to the fixed charge rate of the nuclear project which, if undone, would increase the economic advantage of the

1 NND project. In any event, the adjustment would not have been material to the
2 conclusions of the study.

3 **Q. WHAT IS MR. RICHARDSON'S NEXT CRITICISM OF THE 2015**
4 **STUDY?**

5 A. Mr. Richardson argues that the revenues related to capital fixed charges for
6 the years 2047-2054 were inadvertently held constant and that the NND benefit
7 should be increased by \$2.1 million.

8 **Q. WHAT IS YOUR OPINION WITH RESPECT TO MR. RICHARDSON'S**
9 **CONTENTION ON THIS POINT?**

10 A. SCE&G's spreadsheet model was set up to capture 30 years of capital
11 costs, after which the capital costs were held constant for the remaining 10 years.
12 This limitation is not a matter of significant practical concern because of the effect
13 of the net present worth calculations that are an integral part of these studies.
14 Anticipated changes in revenue that far into the future are so heavily discounted in
15 a present worth analysis that only very large end of period effects will cause a
16 significant change in the outcome of the study. That is why Mr. Richardson's
17 recommended increase in the NND benefit is only \$2.1 million. However, it
18 should be remembered that this change helps the nuclear scenario and cuts against
19 Mr. Richardson's overall criticism of the decision to continue the project.

20 **Q. WHAT WAS MR. RICHARDSON'S NEXT CRITICISM?**

21 A. Mr. Richardson raised criticisms with the treatment of the Net Accumulated
22 Deferred Income Tax Adjustment ("ADIT"). He maintained that the ADIT

1 adjustment was manually set to derive an NND Project net benefit of exactly \$28
2 million in the base case scenario and that the NND benefit should be reduced by
3 \$21.2 million.

4 **Q. DO YOU AGREE WITH THIS CRITICISM?**

5 A. SCE&G's ADIT adjustment was not manually set to derive a result.
6 However, Mr. Richardson is pointing out a flaw in SCE&G's handling of the
7 ADIT adjustment which he explains more precisely when discussing the 2016
8 economic studies. SCE&G calculated the net ADIT benefits and levelized them to
9 the year of unit operation and failed to discount the result a few more years to the
10 beginning of the study period. I do not have Mr. Richardson's exact calculations,
11 so I cannot attest to the accuracy of Mr. Richardson's recommended adjustment of
12 reducing the NND Project benefit by \$21.2 million.

13 **Q. MR. RICHARDSON CLAIMS THAT THE ADIT BENEFIT RELATED TO**
14 **THE ABANDONMENT COSTS WAS NOT REFLECTED IN THE 2015**
15 **STUDY AND THAT THE NND BENEFIT SHOULD BE REDUCED BY \$67**
16 **MILLION. DO YOU AGREE THAT THIS WOULD HAVE BEEN A**
17 **VALID REDUCTION?**

18 A. No, I do not. To claim an abandonment loss deduction for income tax
19 purposes, the Company must show that the NND Project was worthless as of the
20 end of the year. The Company is making such a claim in 2017 because of events
21 that occurred during 2017, including the Westinghouse bankruptcy and Santee
22 Cooper's decision to terminate its funding of the project. It is uncertain whether

the facts existing as of the end of 2015 or 2016 would have supported the claiming of an abandonment deduction for income tax purposes in either of those years; therefore, it is doubtful whether any ADIT benefit would have been available at that time.

Q. BASED OF MR. RICHARDSON'S RECOMMENDATIONS, NOTWITHSTANDING THE QUESTION OF THEIR APPROPRIATENESS, HOW WOULD SCE&G'S 2015 RESULTS CHANGE?

A. The following table shows the results for the base load scenario filed in 2015.

Base Load	Base Gas	50% gas	100% gas
0 CO2	\$28	\$144	\$248
15 CO2	\$97	\$210	\$326
30 CO2	\$166	\$278	\$392

The total impact of Mr. Richardson's recommendations is a reduction in the NND project benefit of \$88.4 million. When you subtract \$88.4 million from each cell, the following table results.

Base Load	Base Gas	50% gas	100% gas
0 CO2	(\$60)	\$55	\$159
15 CO2	\$9	\$121	\$237
30 CO2	\$78	\$190	\$303

Q. WOULD THE \$88.4 MILLION REDUCTION HAVE BEEN SIGNIFICANT ENOUGH FOR YOU TO RECOMMEND IN 2015 THAT SCE&G DEFAULT ON ITS EPC CONTRACT, ABANDON THE NUCLEAR

1 **CONSTRUCTION, AND PURSUE A NATURAL GAS STRATEGY**
2 **INSTEAD?**

3 A. No. While the Company does not accept these changes as proper, even with
4 an \$88.4 million reduction, completing the project remained in the best interest of
5 customers in all of the most likely scenarios. These changes would not have
6 affected the ultimate conclusion of the analysis, which supported continued
7 construction and did so quite strongly.

8 **Q. WHAT WAS MR. RICHARDSON'S NEXT CRITICISM OF THE 2015**
9 **STUDY?**

10 A. Mr. Richardson claimed that the 2015 Economic Study should have
11 reflected a two-year delay in the commercial operation dates ("COD") of the
12 nuclear units. This delay would have resulted in a loss of production tax credits
13 ("PTCs"), a reduction of the NND benefits by \$91.7 million for the PTCs and an
14 additional reduction of \$225 million. According to Mr. Richardson, the total
15 resulting reduction is \$316.9 million.

16 **Q. DO YOU AGREE THAT THE 2015 STUDY SHOULD HAVE REFLECTED**
17 **A TWO-YEAR DELAY AND RESULTED IN A TOTAL REDUCTION OF**
18 **\$316.9 MILLION PRINCIPALLY RELATED TO A LOSS OF FEDERAL**
19 **PRODUCTION TAX CREDITS?**

20 A. No, for two reasons. First, at the time that these studies were done, the
21 Consortium had committed to complete the Units in time for their output to
22 qualify for the PTCs and was devising mitigation plans to make doing so possible.

1 SCE&G was holding the Consortium to its commitments. The operative planning
2 assumption was that the PTCs would be earned and that assumption was properly
3 reflected in the analysis. In addition, at the time, SCE&G was actively working in
4 conjunction with Southern Company and the two companies' legislative
5 delegations (which includes South Carolina, North Carolina, Georgia, Alabama,
6 Mississippi and Florida) to have the PTC deadline removed from the federal tax
7 code. SCE&G and Southern Company were making substantial progress in this
8 effort, and in the Federal budget bill adopted on February 9, 2018, the deadline
9 was amended. Had construction continued, the PTC deadline would not have been
10 an issue. Furthermore, irrespective of this fact, SCE&G considered the costs
11 associated with a delay the following year. The result was an increased cost of \$84
12 million per year which is far less than Mr. Richardson's calculation. Attached as
13 *Exhibit No. ____ (JML-1)* is SCE&G's response to the ORS data request asking
14 for that calculation.

15 **Q. WHAT CRITICISMS DID MR. RICHARDSON RAISE WITH THE 2016**
16 **STUDY?**

17 A. Mr. Richardson claimed that the ADIT calculations in the study were not
18 performed consistently and that the study improperly used a 2016 project start year
19 instead of 2019. According to Mr. Richardson, the NND benefit should be reduced
20 by \$31.3 million. (page 8, line 14).

21 **Q. DO YOU AGREE THAT THE ADIT CALCULATIONS WERE NOT**
22 **PERFORMED CONSISTENTLY AND USED A 2016 PROJECT START**

1 **YEAR INSTEAD OF 2019 SO THAT THE NND BENEFIT SHOULD BE**
2 **REDUCED BY \$31.4 MILLION?**

3 A. Yes, I do. As I explained before, when SCE&G calculated the net ADIT
4 value and levelized it for further analysis, we did not discount the levelized value a
5 few more years to state the present value at the start of the study period instead of
6 the project start year. Mr. Richardson's adjustment of reducing the NND Project
7 benefits is appropriate although I cannot attest the amount should be \$31.4 million.

8 **Q. MR. RICHARDSON CLAIMS THAT "BEGINNING WITH THE LYNCH**
9 **2016 STUDY, SCE&G ASSUMED THAT THE TRANSMISSION PORTION**
10 **OF THE NND PROJECT WOULD NOT BE ABANDONED" (PAGE 8,**
11 **LINE 19) SO THAT THE NND BENEFIT SHOULD BE REDUCED BY**
12 **\$33.7 MILLION. DO YOU AGREE?**

13 A. No. SCE&G did not consider the transmission portion of the NND Project
14 as a separate part of the project until after Westinghouse declared bankruptcy in
15 2017.

16 **Q. MR. RICHARDSON CLAIMS THAT THE ABANDONMENT COSTS**
17 **WERE INCORRECTLY BASED ON THE END OF THE YEAR, I.E.,**
18 **DECEMBER 2016 (PAGE 9, LINE 3), SO THAT THE NND BENEFIT**
19 **SHOULD BE REDUCED BY \$172.7 MILLION. DO YOU AGREE?**

20 A. No. The 2016 Economic Study was submitted in Docket No. 2016-223-E.
21 The hearing in this docket was held on October 4, 2016, and the Commission's

1 order was published on November 28, 2016. The study properly incorporates that
2 timing.

3 **Q. WHAT CRITICISMS, IF ANY, DID MR. RICHARDSON RAISE**
4 **RELATED TO HOW SCE&G CALCULATED CO₂ COSTS?**

5 A. In his testimony, Mr. Richardson claims that SCE&G incorrectly changed
6 how CO₂ costs were handled, that it assumed a rate-based compliance option in
7 the EPA's Clean Power Plan ("CPP"), resulting in the assumption of zero CO₂
8 costs under the nuclear strategy, and that this assumption was not based on any
9 analysis.

10 **Q. DO YOU AGREE WITH THIS ASSESSMENT?**

11 A. No. Mr. Richardson's testimony does not accurately reflect the analysis and
12 work that was undertaken to develop a state compliance plan responsive to the
13 CPP. On August 3, 2015, the Environmental Protection Agency issued the CPP
14 final rules. Shortly thereafter the South Carolina Department of Health and
15 Environmental Control ("SCDHEC") formed a coalition of stakeholders to work
16 on the state's implementation plan. The coalition included representatives from
17 electric utilities and cooperatives, government agencies, industries, environmental
18 justice and environmental non-governmental organizations. SCE&G developed a
19 constrained optimization model in EXCEL that was used to show that the rate-
20 based compliance option was the best strategy for South Carolina. This EXCEL
21 model was made available to everyone on the task force. The task force disbanded
22 before making a final decision because of court and later administration action that

1 prevented implementation of the CPP as written. Nonetheless, I am certain that the
2 task force would have opted for the rate-based plan given its clear advantages to
3 the State of South Carolina.

4 **Q. WHY IS THAT SO?**

5 A. The reason it was logical to assume the rate-based plan would be adopted is
6 simple to understand. Under the mass-based plan the new nuclear units were
7 excluded from the compliance options, and SCE&G's model showed that the state
8 would hit its emissions cap thereby triggering the need to purchase CO₂ credits or
9 to alter an economic resource plan. Under the rate-based compliance option, the
10 new nuclear units could be included in the state's compliance plan and every
11 MWH generated by a new nuclear unit would equate to one emissions rate credit
12 ("ERC") for the state. The rate formula looks like this:

13
$$\text{State Emission Rate} = \text{CO}_2 \text{ Emissions} / (\text{MWH Generated} + \text{ERCs}).$$

14 As more ERCs are created, the state's emission rate for compliance would
15 decrease. With two new nuclear units, South Carolina's emission rate would be so
16 low that the state would be a seller of ERCs to other states and would have no
17 compliance costs, only revenues. In the 2016 economic study, rather than reduce
18 the NND benefits as Mr. Richardson suggests, a strong argument could have been
19 made for increasing the benefits to reflect the revenue that would have been
20 expected from the sale of ERCs. Some of this work was documented by the ORS
21 in their report "Energy in Action: South Carolina State Energy Plan

1 APPENDICES” issued in 2016.¹ Furthermore, attached as *Exhibit No.*_____
2 (*JML-2*) is a chart indicating that at least two-thirds of the states were likely to
3 benefit from choosing the rate-based compliance option. This suggests that there
4 would have been a large market for the trading of ERCs. Since SCE&G would
5 have had an abundance of ERCs generated by the new nuclear capacity, it would
6 be reasonable to increase the NND benefit from the profits of such sales. In any
7 event, there would have been no logic to assuming that South Carolina would have
8 chosen a mass-based plan.

9 **Q. DID MR. RICHARDSON RAISE ANY CONCERNS WITH THE 2017**
10 **STUDY?**

11 **A.** Yes, Mr. Richardson claims that the same four adjustments made to the
12 2016 study should be made to the 2017 study.

13 **Q. DO YOU AGREE WITH THIS CRITICISM?**

14 **A.** No, I do not. The only criticism that is valid deals with the discounting of
15 the net ADIT benefit to the start of the study period. Since this would reduce the
16 NND Project benefits, it would only support the decision to abandon the project.

17 **Q. IN CONCLUSION, DO THE CRITICISMS LEVELED AT YOUR STUDIES**
18 **MATERIALLY CHANGE THE CONCLUSIONS REACHED?**

19 **A.** No. Issues of hindsight aside, and assuming we knew then what we know
20 now about ways to improve the studies presented from 2008 forward, the

¹ The report is available at: <http://energy.sc.gov/energyplan> (last accessed October 1, 2018).

1 criticisms leveled against the planning studies related to the NND Project in no
2 way would have justified a decision to cancel the plants prior to 2017.

3 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

4 A. Yes, it does.